

Comparisons of Job Characteristics

Focus Occupation: [Mechanical Engineers \(17-2141\)](#)

Associated Occupation: [Industrial Engineering Technicians \(17-3026\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 84

Focus Occupation: Mechanical Engineers (17-2141)

Associated Occupation: Industrial Engineering Technicians (17-3026)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Production and Processing	6.0	18.0	14.2	<< Extensive education and/or training may be required
Engineering and Technology	5.7	16.7	21.5	>> Current knowledge level is likely more than sufficient
Mathematics	9.2	15.6	18.1	> Current knowledge level is likely sufficient
Clerical	7.3	15.3	8.9	<< Extensive education and/or training may be required
Design	5.2	13.4	21.0	>> Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 74

Focus Occupation: Mechanical Engineers (17-2141)

Associated Occupation: Industrial Engineering Technicians (17-3026)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Monitoring	9.9	15.5	11.5	<< Extensive development of skills in this area may be required
Complex Problem Solving	9.1	13.2	14.8	> Skill level is likely sufficient
Mathematics	6.2	12.0	15.3	>> Skill level is likely more than sufficient
Systems Evaluation	6.4	12.0	12.0	0 Current skill level may be sufficient
Systems Analysis	6.5	11.8	11.7	0 Current skill level may be sufficient
Technology Design	2.6	8.5	11.0	>> Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 95			
Focus Occupation: Mechanical Engineers (17-2141) Associated Occupation: Industrial Engineering Technicians (17-3026)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Near Vision	11.1	13.3	13.3	0	Current ability level may be sufficient
Number Facility	6.3	11.1	13.0	>	Current ability level is likely sufficient
Selective Attention	8.7	11.0	11.0	0	Current ability level may be sufficient
Originality	7.6	10.7	11.5	0	Current ability level may be sufficient
Fluency of Ideas	7.6	10.4	10.6	0	Current ability level may be sufficient
Mathematical Reasoning	6.3	10.3	15.7	>>	Current ability level is likely more than sufficient
Visualization	7.5	10.3	12.7	>	Current ability level is likely sufficient
Speed of Closure	5.9	8.1	8.7	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 91
Focus Occupation: Mechanical Engineers (17-2141) Associated Occupation: Industrial Engineering Technicians (17-3026)		
Work Activities	Exclusivity of Activity	
Advise clients regarding engineering problems	67	
Analyze engineering design problems	69	
Analyze technical data, designs, or preliminary specifications	47	
Calculate engineering specifications	64	
Communicate technical information	4	
Compile numerical or statistical data	38	
Conduct performance testing	66	
Confer with engineering, technical or manufacturing personnel	25	
Design manufacturing processes or methods	77	
Develop safety regulations	74	
Diagnose mechanical problems in machinery or equipment	65	
Evaluate engineering data	60	
Evaluate manufacturing or processing systems	68	
Examine engineering documents for completeness or accuracy	62	
Explain complex mathematical information	30	
Follow statistical process control procedures	73	

Improve test devices or techniques in manufacturing, industrial or engineering setting	75
Inspect facilities or equipment for regulatory compliance	51
Prepare technical reports or related documentation	22
Read blueprints	10
Read technical drawings	7
Test equipment as part of engineering projects or processes	67
Understand engineering data or reports	48
Use drafting or mechanical drawing techniques	50
Use mathematical or statistical methods to identify or analyze problems	30
Use spreadsheet software	18
Use technical information in manufacturing or industrial activities	67
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 78

Focus Occupation: Mechanical Engineers (17-2141)
Associated Occupation: Industrial Engineering Technicians (17-3026)

Tools and Technologies	Exclusivity
Business function specific software	1
Cameras	2
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Electronic and communication measuring and testing instruments	14
Indicating and recording instruments	2
Industry specific software	1
Length and thickness and distance measuring instruments	2
Lifting equipment and accessories	3
Machine tools	7
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.